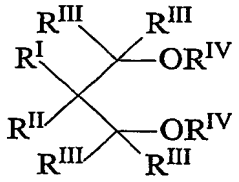
CLAIMS

1. Solid Lewis adducts comprising $MgCl_2$, a Lewis base (LB) belonging to ethers, esters, ketones, silanes or amines and an alcohol ROH, in which R is a C1-C15 hydrocarbon group optionally substituted with heteroatoms containing groups, which compounds are in molar ratios to each other defined by the following formula $MgCl_2(ROH)_m(LB)_n$ in which m ranges from 0.05 to 6, n ranges from 0.08 to 6.
2. The solid adducts according to claim 1 in which the LB is selected from ethers, esters or ketones.
3. The solid adducts according to claim 2 in which the LB is selected from esters or ethers.
4. The solid adducts according to claim 3 in which the ethers are the C2-C20 aliphatic ethers.
5. The solid adducts according to claim 4 in which the ethers are cyclic ethers having 3-5 carbon atoms.
6. The solid adducts according to claim 5 in which the ether is tetrahydrofurane.
7. The solid adducts according to claim 3 in which the esters are alkyl esters of C1-C10 aliphatic carboxylic acids.
8. The solid adducts according to claim 1 in which the R groups are C1-C10 saturated hydrocarbon groups.
9. The solid adducts according to claim 8 in which the R groups are methyl, ethyl and C3-C8 alkyl groups.
10. The solid adducts according to claim 1 in which the ROH alcohol is ethanol.
11. The solid adducts according to claim 1 in which m ranges from 0.1 to 4.5 and n ranges from 0.07 to 3.
12. The solid adducts according to claim 1 in which m ranges from 0.5 to 4 and n ranges from 0.1 to 2.5.
13. The solid Lewis adduct according to claim 1 containing also water in a molar ratio defined by the formula $MgCl_2(ROH)_m(LB)_n(H_2O)_p$ in which the index p ranges from 0.01 to 0.6.
14. Process for preparing the solid Lewis adduct of claim 1 comprising (i) contacting $MgCl_2$, ROH and LB optionally in the presence of an inert liquid diluent, (ii) heating the system up to the melting temperature of the mixture and maintaining said conditions so as to obtain a completely molten adduct and (iii) rapidly cooling the molten adduct thereby obtaining its solidification.

15. Process for preparing the solid Lewis adduct of claim 1 comprising contacting the LB compound with a preformed solid $MgCl_2(ROH)_m$ adduct in which R and m have the same meanings given in claim 1.
16. The process according to claim 15 in which the $MgCl_2(ROH)_m$ adduct derives from a starting adduct in which part of the alcohol has been removed by physical or chemical dealcoholation.
17. The process according to claim 15 in which the LB compound is in vapor phase.
18. The process according to claim 16 in which m is from 0.15 to 1.7.
19. Catalyst components obtained by contacting a solid adducts according to anyone of claims 1-18 with compounds of transition metals belonging to one of the groups 4 to 6 of the Periodic Table of Elements (new notation).
20. The catalyst components according to claim 19 in which the transition metal compound is selected from titanium compounds of formula $Ti(OR)_nX_{y-n}$ in which n is comprised between 0 and y; y is the valence of titanium; X is halogen and R is an alkyl radical having 1-10 carbon atoms or a COR group.
21. The catalyst components according to claim 19 in which the transition metal compound is selected from $TiCl_3$, $TiCl_4$, $Ti(OBu)_4$, $Ti(OBu)Cl_3$, $Ti(OBu)_2Cl_2$, $Ti(OBu)_3Cl$.
22. The catalyst components according to claim 19 further containing an electron donor selected from esters, ethers, amines, and ketones.
23. The catalyst component according to claim 19 in which the electron donor is selected from 1,3-diethers of formula (I)

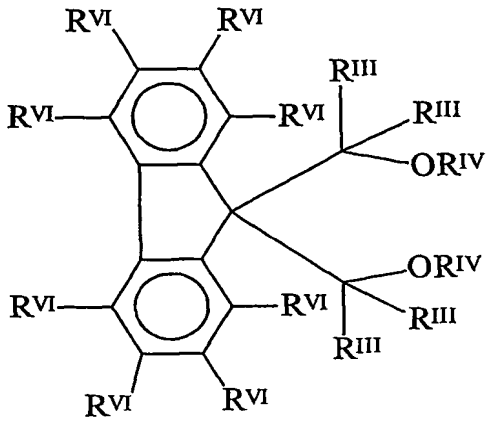


(I)

where R^I and R^{II} are the same or different and are hydrogen or linear or branched C_1-C_{18} hydrocarbon groups which can also form one or more cyclic structures; R^{III} groups, equal or different from each other, are hydrogen or C_1-C_{18} hydrocarbon groups; R^{IV} groups equal or different from each other, have the same meaning of R^{III} except that they cannot be hydrogen; each of R^I to R^{IV} groups can contain heteroatoms selected

from halogens, N, O, S and Si.

24. The catalyst component according to claim 19 in which the electron donor is selected from 1,3-diethers of formula (III)



(III)

where the R^{VI} radicals equal or different are hydrogen; halogens, preferably Cl and F; C_1-C_{20} alkyl radicals, linear or branched; C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkylaryl and C_7-C_{20} aralkyl radicals, optionally containing one or more heteroatoms selected from the group consisting of N, 0, S, P, Si and halogens, in particular Cl and F, as substitutes for carbon or hydrogen atoms, or both; the radicals R^{III} and R^{IV} are as defined in claim 23.

25. The catalysts system for the polymerization of alpha-olefins CH_2=CHR, wherein R is hydrogen or a hydrocarbon radical having 1-12 carbon atoms, obtained by contacting a catalyst component according to anyone of the claims 19-24 with one or more organoaluminum compounds.

26. The catalyst system according to claim 25 in which the organoaluminum compound is an Al-alkyl compound.

27. The catalyst system according to claim 26 further containing an external electron donor compound.

28. Process for the polymerization of olefins carried out in the presence of a catalyst according to anyone of claims 25-27.